WHAT IS CLAIMED IS:

1. A method of fabricating an optical fiber having a plurality of holes extending along a longitudinal direction thereof, comprising the steps of:

preparing an optical fiber preform having a plurality of through holes intended to serve as the holes;

drawing said optical fiber preform by the drawing tension of 0.78 (N) or more while pressurizing the inside of the through holes of said optical fiber perform prepared.

2. A method according to claim 1, wherein said optical fiber preform is drawn by the drawing tension of 1.18 (N) or more.

3. A method according to claim 1, wherein, in the case of obtaining an optical fiber with the holes each having a diameter d of 2 (μm) or less, the pressure P (kPa) applied to the perform holes of said optical fiber preform satisfies the following relationship.

$$-d + 4.5 < P < -1.5d + 6.8$$

4. A method according to claim 1, wherein, in the case of obtaining an optical fiber with the holes each having a diameter d of 2 (μm) or more but 4 (μm) or less, the pressure P (kPa) applied to the inside of the perform holes of said optical fiber preform satisfies

the following relationship.

$-d + 4.5 < P < -d + 5.8$

5. A method according to claim 1, wherein, in the case of obtaining an optical fiber with the holes each having a diameter d of 4 (μm) or more but 6 (μm) or less, the pressure P (kPa) applied to the inside of the perform holes of said optical fiber preform satisfies the following relationship.

$-0.2d + 1.3 < P < -0.4d + 3.4$

6. A method according to claim 1, wherein, in the case of obtaining an optical fiber with the holes each having a diameter d of 6 (μm) or more, the pressure P (kPa) applied to the inside of the perform holes of said optical fiber preform satisfies the following relationship.

$0.1 < P < 1.0$

7. A method according to claim 1, wherein said optical fiber preform is drawn with the drawing tension of 1.76 (N) or less in such a manner that a fiber diameter after drawing becomes 100 (μm) or less.

8. A method according to claim 7, wherein, in the case of obtaining an optical fiber with the holes each having a diameter d of 2 (μm) or less, the pressure P (kPa) applied to the inside of the perform holes of said optical fiber preform satisfies the following relationship.

$-d + 4.5 < P < -1.5d + 6.3$

9. A method according to claim 7, wherein, in the case of obtaining an optical fiber with the holes each having a diameter d of 2 (μm) or more but 4 (μm), the pressure P (kPa) applied to the inside of the perform holes of said optical fiber preform satisfies the following relationship.

$-d + 4.5 < P < -d + 5.3$

10. A method of claim 7, wherein, in the case of obtaining an optical fiber with the holes each having a diameter d of 4 (μm) or more but 6 (μm) or less, the pressure P (kPa) applied to the inside of the perform holes of said optical fiber preform satisfies the following relationship.

$-0.2d + 1.3 < P < -0.3d + 2.5$

11. A method according to claim 7, wherein, in the case of obtaining an optical fiber with the holes each having a diameter d of 6 (μm) or more, the pressure P (kPa) applied to the inside of the perform holes of said optical fiber preform satisfies the following relationship.

$-0.1 < P < -0.7$

12. An optical fiber comprising:

a core region extending along a longitudinal direction of said optical fiber;

a cladding region provided on an outer periphery

of said core region; and

a plurality of holes provided in at least one of said core region and said cladding region and extending along the longitudinal direction, said holes arranged so as to constitute a layered structure having three or more layers in a cross section orthogonal to the longitudinal direction,

wherein, when the maximum diameter and the minimum diameter of each of hole arranged so as to constitute the inner layers except the outermost layer of the layered structure are respectively set to d_{MAX} and d_{MIN}, the mean value of the maximum diameters d_{MAX} and the minimum diameters d_{MIN} of the holes arranged so as to constitute the inner layers is set to d_A, the fist deviation of each of the holes arranged so as to constitute the inner layers is set to D_1 (%) as defined by the following formula:

$$D_1 = \frac{|d_{MAX} - d_A|}{d_A} \times 100, \text{ and}$$

the second deviation of each of the holes arranged so as to constitute the inner layers is set to D_2 (%) as defined by the following formula:

$$D_2 = \frac{|d_{MIN} - d_A|}{d_A} \times 100,$$

both of the first deviation D_1 and the second deviations D_2 of each of the holes arranged so as to constitute the

inner circles are 10 (%) or less.

13. An optical fiber comprising:

a core region extending along a longitudinal direction of said optical fiber;

a cladding region provided on an outer periphery of said core region; and

a plurality of holes provided in at least one of said core region and said cladding region and extending along the longitudinal direction, said holes arranged so as to constitute a layered structure having three or more layers in a cross section orthogonal to the longitudinal direction,

wherein, when the maximum diameter and the minimum diameter of each of said plurality of holes are respectively set to d_{MAX} and d_{MIN}, the mean value of the maximum diameters d_{MAX} and the minimum diameters d_{MIN} of said plurality of holes is set to δ_A, the fist deviation of each of said plurality of holes is set to Δ_1 (%) as defined by the following formula:

$$\Delta_1 = \frac{|d_{MAX} - \delta_A|}{\delta_A} \times 100,$$ and

the second deviation of each of said plurality of holes is set to Δ_2 (%) as defined by the following formula:

$$\Delta_2 = \frac{|d_{MIN} - \delta_A|}{\delta_A} \times 100,$$

both of the first deviation Δ_1 and the second deviation

Δ_2 of each of said plurality of holes are 10 (%) or less.